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Teleport spreads fiber-optic links across the county

By JAMES W. CRAWLEY
Staff Writer

For two years, Charles Christ has been keeping his mouth shut.

As local manager of Teleport Communications Group, he has been keeping quiet about the company's installation of fiber-optic cable above and beneath the streets of San Diego.

But starting now, Christ is talking.

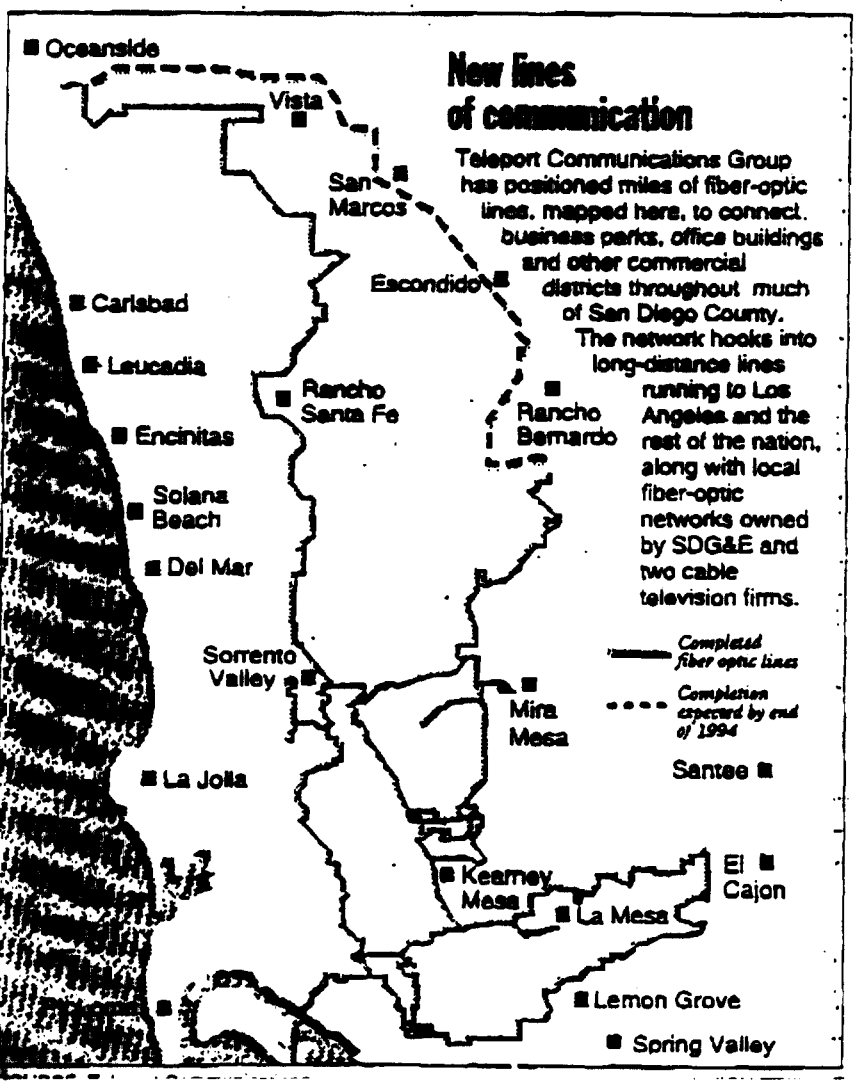
Teleport today will unveil its local fiber-optic network, which stretches 212 miles from Oceanside to the downtown area, Point Loma and El Cajon.

Another segment, parallel to Interstate 15, will connect Rancho Bernardo, Escondido and San Marcos into the Teleport system. By December, the local network should be hooked to another Teleport system based in Anaheim.

The New York-based telecommunications company's local network bypasses Pacific Bell lines by connecting customers to long-distance carriers such as AT&T, MCI and Sprint.

Teleport also connects to fiber-optic networks built by Cox and Dimension cable systems and SDG&E. It even has ties to Pacific Bell switching centers.

"I can go where all those networks go," Christ said.



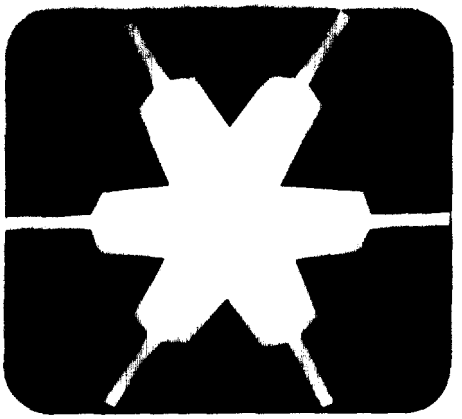
Businesses Within One Block of CAP Networks
Downtown San Francisco

150 Post Street Building
A Foster Huggins & Co. Inc.
A S P E C T Foundation
AD-Vantage Corp.
AERO Special Delivery Service, Inc.
Aesthetics Interactive Data
AETNA Life & Casualty
Airport Bus Service-Airporter
Alex Brown & Sons Inc.
Alexander & Alexander-CA Inc.
Amdahl Corp.
American Express
American Hawaii Cruises
American Home Assurance Co.
American Manufacturers Mutual
American Star Insurance
American Telephone & Telegraph
AMFAC Inc.
Anderson Consulting
Apple Computers
Arista Enterprise Inc.
Arrow-Lifschultz Freight
Arthur Andersen & Co.
Atlantic Financial Savings Bank
B A Investment Management
B P Alaska Exploration Inc.
BA Cheque Corp.
Bain & Company
Baker & McKenzie
Balfour Guthrie & Co., Ltd.
Bancal Tri-State Corp.
Bancroft-Whitney Company
Bank of California
Bank of Canton of California
Bank of San Francisco
Bank of the Orient
Bank of the West
Bank of Tokyo Ltd.
BankAmerica Corporation
BankAmerilease Group
Banta Ventures Inc.
Barclays Bank P L C
Bay Bottlers Ltd.
Bear Stearns & Company
Beaver Insurance Co.
Bechtel Group Inc.
BEI Electronics Inc.
Berelson Company The-Sea Legs
Berger & Co., Inc.
BHP-Utah Minerals International
Bill Graham Presents Inc.
Birr Wilson Securities
Blue Cross & Blue Shield
Blueprint Service Co.
Bridge Foods Inc.
British Petroleum Alaska
Brobeck Phleger & Harrison
Bronson Bronson & McKinnon
Burns International Security
C. W. Sweeney & Co.
California Medical Association
California National Bank
California Savings & Loan
California State AAA
Cargill Investor Services
Carroll Burdick & McDonough
Castle & Cooke Inc.
Casto Travel Inc.
Century Bank
Chalone Inc.
Char-Tours Inc.
Charles Schwab & Co., Inc.
Chem Oil Corp.
Chevron USA
China Airlines
Chubb Group of Insurance Co.
Cigna Companies
Citibank
Citicorp North American
Civil Service Employees Ins.
Coldwell Banker
Columbus Line C/O Bakke St.
Comdisco Financial Service
Commonwealth Funding Inc.
Community Psychiatric Ctr.
Consolidated Fibres Inc.
Continental Maritime of San Francisco
Continental Reinsurance
Cooper White & Cooper
Coopers & Lybrand
Cramer Associates
Cravens Dargan & Co.
Crent Company
CSE Corp.
Dahl-Beck Electric Co.
Dancers Guild International
Darcy Masius Benton & Bowles
Data Processing & Accounting Services
Dean Witter Reynolds Inc.
Decimus Corp.
Del Monte Corp.
Deloitte & Touche
Delta Dental Plan of California
Delta Steamship Line
Di Giorgio Corp.
Diamond International Corp.
Digital Equipment Corp.
Dillingham Corp.
Dimond Williams & Company

Dinwiddie Construction Co.
Dole Food Company
Don C. Hansen Inc.
Donaldson Lufkin & Jenrette
EBJ Wholesale
Easterday Janitorial Supply Co.
Electrical Appliance Parts
Electronic Data Systems
Ellis Brooks Chevrolet
Empire Tours
Equicor-Equitable HCA Corp.
Equitable Life Assurance
Ernst & Young
Eureka Energy Co.
European Motors Limited
Executive Courier Network
Facsimile Machines-Ricoh
Farella Braun & Martel
Fashion Design
Federal Reserve Bank
Financial Center Bank
Firemen's Fund Insurance
First Boston Corp.
First Deposit Corp.
First Nationwide Financial Corp.
First Republic Bancorp
Foote Cone & Belding
Fritz Companies Inc.
Fritzi of California
GATX Leasing Corp.
GT Capital Management Inc.
Gallo Salame Inc.
Gas Lines Inc.
General Steam Ship Corp. Ltd.
General Electric Co.
Gensler & Associates
Getz Corporation
Girvin Conrad & Girvin
Golden Brands
Golden Coin Savings & Loan
Golden Gate Tobacco Inc.
Golden Gate University
Golden Rockies Ltd.
Goldman Sachs & Co.
Gordon & Rees
Graham & James
Great Western Bank
Gregory Quilici
Grey Advertising Inc.
Grubb & Ellis
Grubb & Ellis Co.
Guardian Life Insurance Co.
Gulf Atlantic Life Insurance
Gump's
Guy Carpenter Co. Inc.
Hal Riney & Partners Inc.
Hambrecht & Quist Inc.
Hamilton Savings Bank FSB
Hancock Rothert & Bunshoft
Handlery Hotels
Hapag-Lloyd AG C/O Balfour
Harper & Row Publishers Inc.
Hartford Insurance
Health Care Receivables
Health Resource Management
Healy Tibbitts Builders Co.
Heller Ehrman White
Hellmuth Obata & Kassabaum Inc.
Hexcel Corp.
Hibernia Bancshares Corp.
Hills Brothers Coffee Inc.
Hoegh Lines C/O Transpacif
Home Federal S & L Association
Home Insurance Co.
Homestake Mining Company
Hotel Mark Hopkins Intrcntntl
Howard Rice Nemerovski Canady
Hoyt Shepston Inc.
Hyatt Hotels & Resorts
IBM Corp.
I Magnin & Co.
IL Fornaio
INA AETNA Insurance Co.
Industrial Indemnity Co.
Industrial Underwriters Inc.
Insurance Co. of NA
Interactive Dev Environments
Interocean Steamship
Interolean Agencies Inc.
Interpool Limited
ITEL Containers Intl Corp.
ITEL Containers Intrntl Inc.
ITEL Rail Corporation
JE Lowden & Co.
J. Walter Thompson Co.
Jackson Tufts Cole & Black
Japan Travel Bureau Intl
Jardine Insurance Brokers Inc.
Joe Aca International Inc.
Jossey-Bass Inc.
K & G Promotional Advertising
K G O TV Channel 7
K G O-AM
K P I X Television Channel 5
K P M G Peat Marwick
K S F O AM
Kanematsu U S A-Inc.
Kaplan McLaughlin Diaz
Kerr Steamship Co. Inc.
Ketchem Yellow Pages
Kidder Peabody & Co. Inc.

Kikkoman International Inc.
Kirk Paper Co. Inc.
KNBR-AM
Landell Mills Market Research
Landor Wordmark
Laurel Burch Inc.
Lavino Shipping Agencies Inc.
Le Meridien Hotel
Leading U S A Corp.
Levi Strauss & Co. Inc.
Lexitron Corp.
Liberty Gold Fruit Co. Inc.
Lifeco Travel Services Inc.
Lilli Ann Corp.
Lillick McHose/Charles
Linda Lewis
Livingston Bros.
Long & Levit
Lotus Development Corp.
M C I Telecommunications Corp.
M J B Co.
Mac World Communications
Macy's
Maddan & Co. Inc.
Maersk Line Agency
Major Information Systems
Major Legal Services
Maltby Electric Supply Co. Inc.
Menderin Oriental SF
Marsh & McLennan Inc.
Marubeni America Corp.
Matson Navigation Co.
Matthew Bender & Co. Inc.
McCann-Erickson Inc.
McCune Audio-Visual-Video
McCutchen Doyle Brown
McKesson Corporation
Menke & Associates Inc.
Merril Reese Inc.
Merrill Lynch Pierce & Fenner
Metropolitan Insurance
Miller Freeman Publications
Mitsubishi International Corp.
Mitsui & Co U S A Inc.
Mitsui OSK Lines Co.
MK-Ferguson
Montgomery Securities
Morgan Grampian
Morgan Stanley & Co. Inc
Morrison & Foerster
National Westminster Bank
Natural Gas Corp. of CA
Nedlloyd Lines
New York Life Insurance
Nippon Express Travel U S A
Norcal Mutual Ins. Co.
Nordstrom
Norman S. Wright Co.
Northwestern Mutual Life Ins.
Northwestern Pacific RR Co.
Norton Lilly & Co. Inc.
Norton Lilly International Inc.
Nova Knits Inc.
Nurserymen's Exchange
Nynex Business Centers
Office Pavilion
Offices Unlimited
One Pass Film & Video
Oracle Corporation
Orient Overseas Services Inc.
Orrick Herrington & Sutcliffe
Otagiri Mercantile Co. Inc.
Otis Elevator Company
Oversees Shipping Co.
P L M Railcar Services Inc.
P M I Mortgage Insurance Co.
Pacific Bank
Pacific Coast Savings & Loan
Pacific Far East Line Inc.
Pacific Gas & Electric Co.
Pacific Gas Transmission Co.
Pacific Liner Agency
Pacific Molasses Co.
Pacific Transport Co.
Pacifico Creative Service Inc.
Paine Webber
Park Hyatt San Francisco
Parrott Ranch Co. JV
Parsons Brinckerhoff & Quade
Patrick & Co.
Perini-Western Building
Pettit & Martin
Philadelphia Life Insuranc
Philippine Airlines
Pierre Restaurant-Le Meridien
Plaza Insurance Sales Inc.
Polaris Aircraft Leasing Corp.
Polynesia Line LTD.
Price Waterhouse
Prime Computer Inc.
Prudential Insurance Co.
Prudential-Bache Securities
Qantas Airways
R C L Tours Inc.
R C M Capital Management
Rainoldi Kerzner & Radcliff
Redwood Bank
Regent MFG Co.
Republic Indemnity Co-America
Roadrunner Delivery Inc.
Robert Half Intl Inc.

Robertson Stephens & Company
Rosenbluth Travel
Rucker-Fuller Co.
Runaway Tours Inc.
S F Sewing Assn.
Saatchi & Saatchi D F S
Saks Fifth Ave.
Salomon Brothers Inc.
San Francisco Airport Hilton
San Francisco Port Commission
San Francisco Reinsurance
San Pacific Import Inc.
Sanwa Bank of California
Security Pacific Leasing Corp.
Security Pacific National Bank
Sedgwick Detert Moran & Arnold
Senator Linie U S A Inc.
Shaklee
Sharper Image Corporation
Shearson Lehman Hutton Inc.
Sheraton
Shorenstein Company
Showa Line c/o Norton Lill
Sierra Club
Sincere Federal Savings Bank
Skasol Incorporated
Skidmore Owings & Merrill
Southern Pacific Transport
Southern Steam Inc.
Southwest Marine
Speciality Brands Inc.
St. Francis Memorial Hospital
Standard Fruit-Steamship Co.
Standard Pacific Gas Line
Star Terminal Co. Inc.
Stauffer Chemical Co.
Stormbreak Corp.
Sum Mark Home Health Care Co.
Sumitomo Bank
Super Shuttle
Sutro & Company Incorporated
Swett & Crawford
Swinerton & Walberg Co.
Tandem Computers Inc.
Taylor Made Office Systems Inc.
Teachers Insurance & Annuity
Tecxel Corporation
Ted L. Rausch Co.
Thomas Cook Travel
Topps & Trousers
Toyomenka America Inc.
Transamerica Corp.
Transamerica Occidential Insurance Co.
Transamerica Title Insurance
Transamerican SS Agency
Transcisco Tours Inc.
Transpacific Transportatio
Travelers Insurance
Tri Valley Growers
Tutor-Saliba Perini
U R S Corp.
USF&G Finance Security Co.
U S Navigation-Pacific
Union Bank
United States Leasing
Unocal Corporation
US Portfolio Leasing
US Postal ServiceUS Windpower
Utah International
Viacom Cablevision
Viking Distributing Co. Inc.
Visiting Nurses & Hospice
VWR scientific
W H Wickersham & Co. Inc
Walker Interactive Systems
Wall Street Journal
Wang
Wang Laboratories Inc.
Weeks-Howe-Emerson Co. Inc.
Well Fargo & Co.
West Coast Beauty Supply
Western Administration Co.
Western Communications
Western Messenger
Western Steamship
Westpac Banking Corporation
Wilbur-Ellis Co.
Williams Diamond & Co.
Williams-Sonoma Inc.
Wilsey Bennett Co. Foods
Win Fashion Inc.
Wine Distributors
Wine Institute
Winterland Productions
Wo Chong Co. Inc
Workers Compensation Insurance
Wyndham Food Inc.
Xerox Corporation
Young & Rubicam



Access Competition in California

Pacific Bell **September 1994**

Scope

In the NRPM, the Commission asked, among other things:

1. What is the current state of competition for local exchange and interstate access?
2. What ability do CAPs and others have to compete with LECs? What data indicate the level of actual and potential competition from CAPs and other providers?

This paper responds briefly to these two questions.

1. The Current State of Competition for Local Exchange and Interstate Access Services

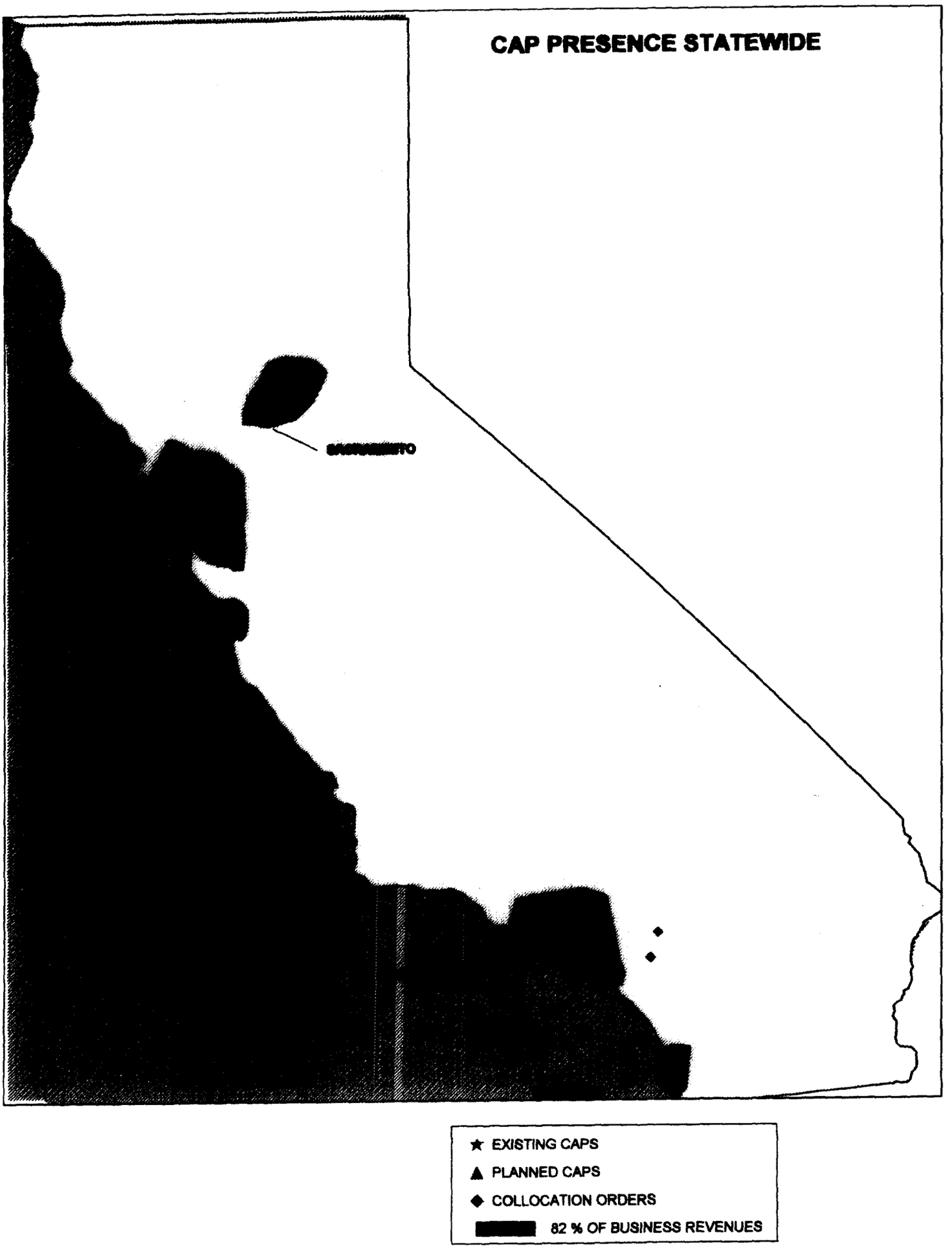
A. The "99%" Problem

Before we present any information on this subject, we have to undertake the formidable task of correcting some misinformation that has been disseminated. For example, our competitors have frequently alleged that we have 99% of the "local access market." That statistic is wrong and what it purports to prove is irrelevant.

First, it doesn't segment the market in any way that is economically meaningful. It combines the comparatively few areas where we make a profit with the many where we don't. A complete reform of the access rules would end the subsidy from high-profit low-cost markets to low-profit high-cost markets. But until that reform occurs our ubiquity has no intrinsic advantage. It's simply an incentive to cherry-picking and inefficient entry by other providers. Our competitors don't treat "local access" as a single market. They enter the **markets** that are lucrative because of high demand and low cost, and avoid the rest.

If one analogy may illuminate this it's the U.S. Postal Service - the mail carrier of last resort. An analysis similar to the "99%" argument would show that the Postal Service has a majority "market share". That doesn't prevent the Postal Service from projecting a loss of $2.4 billion this year. If the Postal Service had real owners, they would be more concerned about its share of the **profitable** markets than how much of the population it serves.

In the downtown areas of Los Angeles and Orange County, San Francisco, San Diego, and Sacramento no fewer than four CAPs offer dedicated connections. These metropolitan areas represent only 5% of the land area of California yet generate over 80% of the business calling revenues. Our competitors don't have to serve more than one-twentieth of our geographic area to reach the vast majority of our business revenues.


CAP PRESENCE STATEWIDE
SACRAMENTO
EXISTING CAPS
PLANNED CAPS
COLLOCATION ORDERS
82 % OF BUSINESS REVENUES

Second, "99%" refers only to access charges paid by IXCs. It ignores access charges paid by end users (about 40% of our HICAP circuits are provided directly to end users, not IXCs), end users who use private networks of their own or of another provider (such as AT&T's MEGACOM or MCI's PRISM), cellular access, and perhaps most important the intraLATA self-supply capabilities of the IXC's own networks. Our largest and most formidable competitors aren't CAPs. They're our largest customers, the IXCs. Unlike our competitors, AT&T, MCI, and others, we don't have the luxury of pretending that IXCs' self-supply of access can be ignored in our market plans. Access is a "make or buy" decision for IXCs. As intraLATA competition is authorized, the attractiveness to IXCs of building their own intraLATA networks will increase.

Even if "access" were a single market, to calculate our share of traffic the following computation would be necessary:

$$\frac{\text{Switched + Special Access}}{\text{Switched + Special Access + CAP + IXC Self Supply + Cellular + Private}}$$

where the Switched and Special Access numbers are from the LEC, CAP refers to access provided by CAPs, IXC Self Supply is access provisioned by the IXCs themselves, Cellular is cellular access, and Private refers to the capacity in private networks that are not telecommunications providers (such as privately constructed networks, VSAT, and microwave).

The "99%", then, isn't 99% of the **profitable** markets, and it's not **99%** either. But how much smaller it is no one can determine until our competitors' ability to self-supply and other parts of the denominator are known. AT&T's enormous ability to self-supply can be garnered indirectly from the fact that its interoffice network in California is about twice the length of ours.

Third, "99%" refers to **revenue** rather than supply or demand. As the Commission recognized in Docket 90-132, revenue share is an indication, not a source of market power. In this case it's a very poor indication. For example, it assumes that a dollar of special access revenue represents the same share of the "market" as a dollar of switched access, which it obviously untrue.

Access services are fungible and widely resold. They're purchased by sophisticated customers, all of whom have alternatives including, for most, supplying themselves. For the carrier access market, market power is a function of each provider's capacity, not its current revenues - the fraction of the market that **can** be served by any provider.

Therefore, while our competitors make claims about the state of the access services market, the size of the market and the power of any provider - including us - is unknown because we're the only ones required to file information on switched usage and transmission capacity. What we **do** know about

the market for carrier access services indicates there's an **oversupply** of capacity. As MCI recently said, "every carrier that has built fiber capacity has installed plenty of extra capacity".[1] Peter Huber has estimated that no more than 10% of CAP fiber capacity is actually being used to carry traffic.

AT&T has been one of the chief propagandists of the "99%" factoid, yet it took a diametrically opposed position in Docket 90-132. Referring to the excess capacities of its competitors' networks, AT&T said that "the available capacity of ...competing carriers...is the most telling indicator of the strength of competition." They argued that "the existence of this excess capacity precludes the exercise of market power by any carrier - including AT&T." The Commission agreed with this analysis. Now AT&T advocates a market share test that's designed for us to fail even if we lost all of our profitable markets.

B. Competitive Markets in California

California cannot be considered one unsegmented market. It is so large, its population and businesses so diverse, its land area so varied, that it defies neat market classification. This is especially true in the California telecommunications market. Customers range from the residential users who only need POTS service with touch-tone to large business and government customers who require sophisticated voice, data, and image processing and transmission. Customers demand not only different types of services but widely different quantities as well. If every customer consumed a like amount of the same services, demand would be homogenous. For example, in order for a new competitive entrant to gain a 10% market, it would have to take away 10% of the demand from the incumbent. But demand is not homogenous. In telecommunications services, the distribution of revenues is highly concentrated: a small percentage of customers, lines, and facilities account for a disproportionate share of the revenues. Moreover, since the residential and business population is not randomly distributed over the California land mass, customer demand for these services tends to be highly concentrated in small geographic areas. This concentration enables competitive entrants with modest geographic serving areas to compete for a substantial share of revenues.

This section discusses the California telecommunications marketplace in terms of demand for services, paying particular attention to the way in which demand for services and revenues is distributed across different geographies. It discusses how the telecommunications market should be segmented. It concludes by looking at an overlay of CAP networks and serving areas, and discovers, not surprisingly, that their serving areas and Pacific Bell's dense, high volume, high revenue producing markets are virtually the same.

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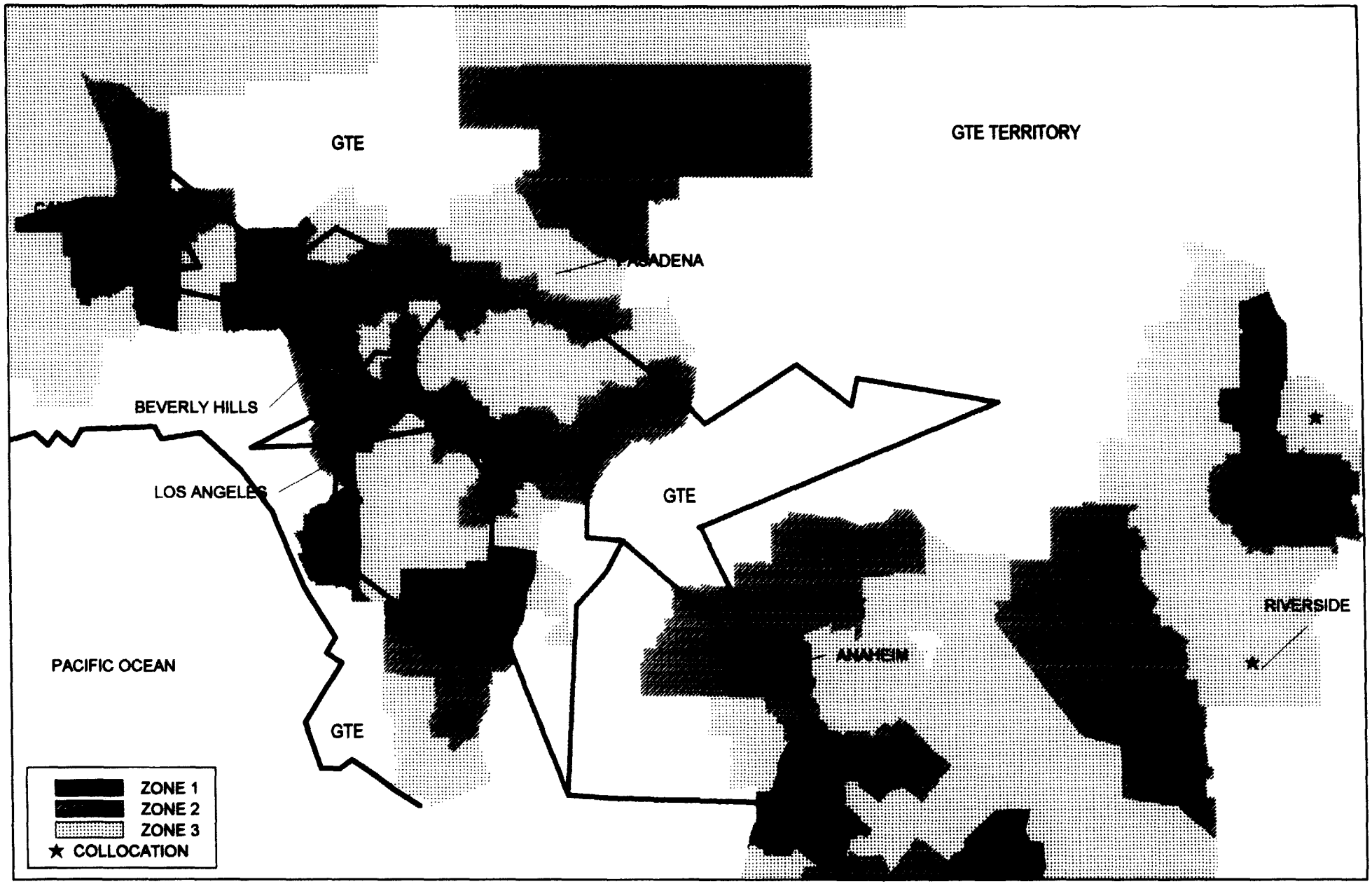
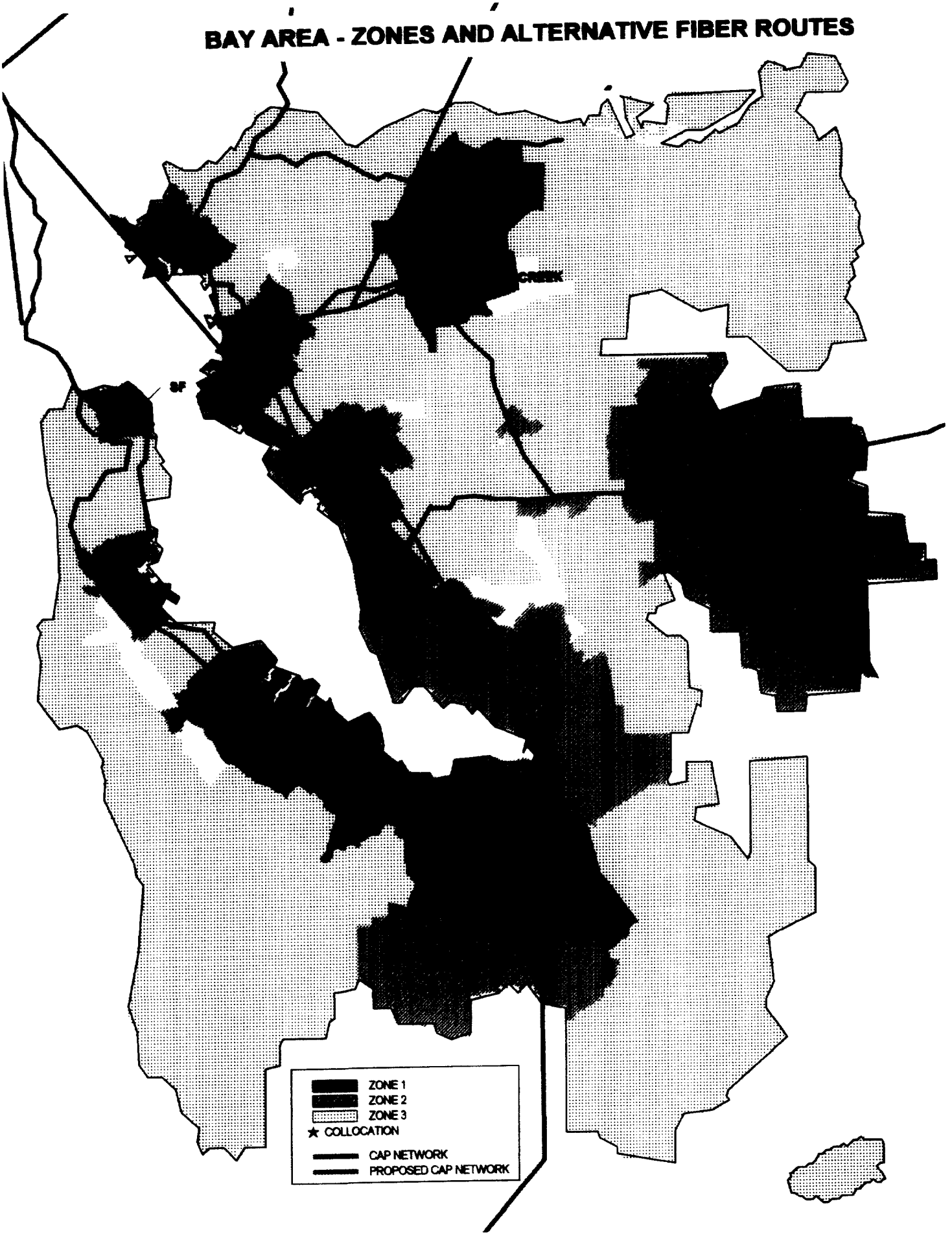
[1] MCI News Release, October 26, 1993, "Long Distance: Public Benefits from Increased Competition", Robert E. Hall, p. 23.

LOS ANGELES REGION - ZONES & ALTERNATIVE FIBER ROUTES



BAY AREA - ZONES AND ALTERNATIVE FIBER ROUTES



Relevant Markets

The geographic concentration of revenues in California, and the relative ease with which entrants can reach them, creates an environment ripe for new entrants to enter, gain a foothold, and skim these areas of concentration with little worry of a meaningful LEC response. The current rules don't permit it. Real competition in Redding, CA for HICAP services, where demand is weak, and unit costs are high, is negligible; competition in the dense, relatively low cost urban areas of Los Angeles, San Francisco, San Diego, and Sacramento is anything but. Fifty-nine percent of Pacific Bell's interstate HICAP circuits are in just 16 wire centers. As of the date of this report we have received orders for collocation in 14 of them.

The market for HICAP services is not the same in downtown San Francisco as it is in Redding. There is no one "California" market for HICAP, but many geographically smaller markets that are created by the supply and demand dynamics, and the costs, prices, and availability of substitutes in these particular market areas. The question really is one of identifying the characteristics of a geographically relevant market. Using the DOJ Merger Guidelines as an entry point of discussion which define the geographic component of an economic market, Prof. Schmalensee and Taylor conclude that "the LEC wire center is the smallest possible geographic area to which market power analysis can practically be applied." [2] They go on to show that if customers residing within the boundaries of the wire center have adequate alternatives available to them, the LEC cannot charge supra-competitive prices and therefore lacks market power. The showing required by the LEC under the USTA proposal for access reform is beyond the scope of this paper. But the concept of relevant markets is further examined below by looking at some of the demand and revenue characteristics of different markets, using the wire center as the level of aggregation of demand and revenues. The following section shows the way in which telecommunications services and revenues are distributed throughout California, paying particular attention to the way in which they correspond to wire center boundaries - to relevant markets - and to where the CAP efforts have been aimed at capturing these same markets.

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[2] "Comments on the USTA Pricing Flexibility Proposal", March 28, 1994, Profs. Richard Schmalensee and William Taylor, p. 23.

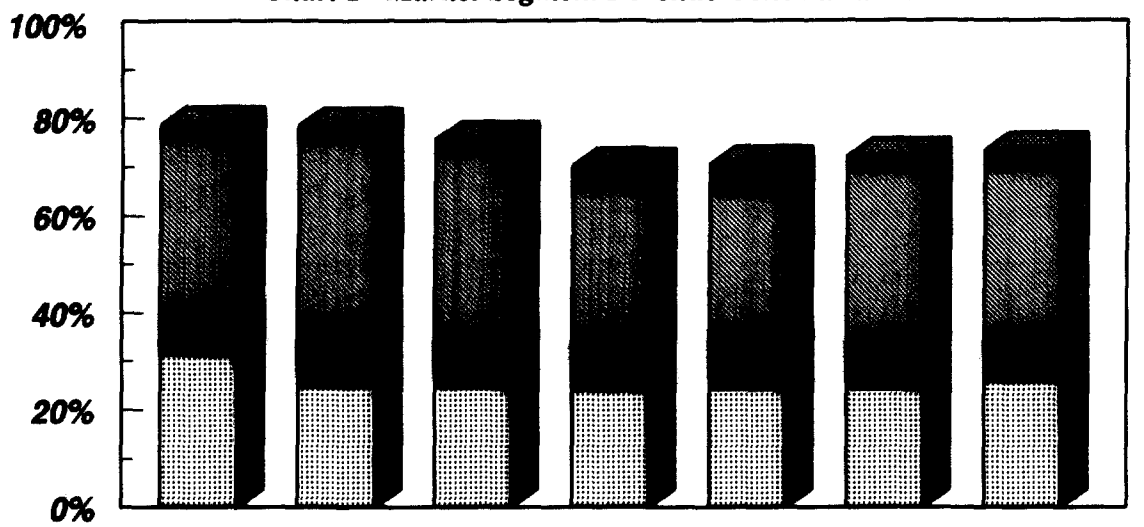
C. Market Concentration

In California:

- *1% of the land area produces 49% of the business calling revenues*
- *6.5% of the land area produces 90% of the business calling revenues*
- *Half of the business lines are in 10% of the wire centers*
- *Half of the business toll revenues come from customers in 11% of the wire centers*
- *Half of all end user access lines are in 15% of the wire centers*
- *One third of all interstate access minutes come from 8% of the wire centers*
- *90% of interstate HICAP circuits are in 12% of the wire centers*
- *As of September we have received orders or bona fide requests for collocation in 47 wire centers*
- *The four largest metro areas, Los Angeles, San Francisco, San Diego, and Sacramento account for 72% of Pacific's revenues.*

The wire centers in the four largest metropolitan areas of Los Angeles, San Francisco, San Diego, and Sacramento, account for nearly 80% of all business toll revenues and business access line demand, 75% of the switched access minutes, and nearly 90% of the HICAP demand in California. This demand concentration is further examined below, with a look at the concentration profiles of each area.

Chart 1 Market Segment Revenue Concentration



	LARGE BUSINESS	MEDIUM BUSINESS	SMALL BUSINESS	SPECIAL ACCESS	SWITCHED ACCESS	RESIDENCE	TOTAL
San Francisco	31.3%	24.7%	24.7%	23.9%	24.2%	24.2%	25.7%
San Diego	7.6%	11.4%	9.7%	10.1%	11.9%	10.7%	10.4%
Los Angeles	36.4%	38.0%	37.5%	30.0%	26.2%	33.1%	32.1%
Sacramento	3.0%	3.3%	2.9%	4.9%	6.2%	3.2%	4.0%
Total	78.3%	77.4%	74.8%	68.9%	68.5%	71.2%	72.2%

- *Chart 1 displays the revenue by market segment as a percentage of all Pacific Bell revenue*
- *Combined Metro Areas have 64 of the 77 offices that have been requested for collocation*

Another indication of the degree of demand concentration can be found by comparing the revenue and traffic volumes in those offices that have been tariffed for collocation, to those for all other offices. The table below gives a concentration index for various types of services. This index is equal to the average demand (or revenue) for the service in collocation offices divided by that in non-collocation offices, or:

$$INDEX = ((x/n)/(y/m))$$

where
- x = sum of the value for all collocation offices
- n = number of collocation offices
- y = sum of the value for all non-collocation offices
- m = number of non-collocation offices

Using business lines in service as an example, the total business lines in 75 offices tariffed for collocation might be 2.25 million, or an average of 30,000 per office. If the average number of business lines per office for those offices not tariffed for collocation is 4,300, then the business line index would be equal to 7 (30,000/4,300). The index is greater than one in all cases, and shows an increasing measure of concentration as the service continuum steps from residence services up through the services that large business customers use. This is no surprise; the offices targeted for collocation were not chosen haphazardly. The CAPs know where the large business customers are and intend to use collocation as one means of pursuing them.

Table 4 Concentration Index

SERVICE	INDEX
RES REVENUE	2.96
RES LINE IN SVC	3.04
INTER SWITCHED ACC MOU	3.23
BUS TOLL	6.21
TOTAL BILLED REV (EXCHANGE)	6.85
BUS LINE IN SVC	7.02
TOTAL BUSINESS REVENUE	7.42
PRIVATE LINE REVENUE	14.75
INTERSTATE SP ACCESS HICAP	21.83

2. The Competitive Ability of CAPs and Others

A. Introduction

The significance of CAPs is not related to their share of all local exchange revenues. It is their success in the limited number of profitable markets they have chosen to enter. Quality Strategies work in CAP market share studies in California indicate that CAPs have over 30% of the market for Special Access DS1-and-above services where customers have an alternative to Pacific Bell in the downtown areas of Los Angeles and San Francisco.

The California Public Utilities Commission first authorized CAPs to provide high speed intraLATA and interLATA special access service in California in 1989. Since that time, CAP growth has been nothing short of phenomenal. Nationwide, the CAP industry deployed 7 times as many fiber miles in 1992 as in 1988 *(table 1)*, much of it in the dense metropolitan areas of the Los Angeles basin and the San Francisco Bay Area. Since 1989, CAPs have grown, not only in scale but in scope. San Diego and Sacramento now have several CAPs presently operating, with more networks under development. The portfolio of services provided by CAPs has evolved and grown far beyond special access services to include a full spectrum of private line offerings from DS0 through DS3 speeds, SONET, LAN interconnection, Multi-Megabit Data Services (MDS), fractional DS1, and ISDN. The CAPs are also establishing a beachhead for switched services which will, by some industry estimates, take over as a major source of revenue by 1997. Their staggering 40% revenue growth rate in 1993 (industry revenues estimated at $350 million) keeps them on pace to top the one billion dollar mark by the end of the decade.

This section discusses who these companies are, what they offer, and where they market their products and services in California. It also describes their growth and how they plan on addressing the California market over the next several years.

B. California Industry Profile

Metropolitan Fiber Systems

This company, headquartered in Illinois, has offices in San Francisco and Los Angeles, is the largest in the industry with 1993 revenues nationwide of $135 million.

Services

- InterLATA Special Access (all speeds)
- Bandwidth on Demand
- IntraLATA DS1 and higher speeds
- MDS
- LAN connectivity
- Switched services

Network

- San Francisco Bay Area - 13 mile network, connecting 51 buildings in SF. Plans to interconnect with 11 central offices on the west side of San Francisco Bay. Sub-ring construction is well under way for Silicon Valley communities, with ATM switching capability deployed in San Jose. MFS announced deployment plans for Oakland, other possible sites include Fremont and Hayward.
- Los Angeles - 43 mile network connecting 97 buildings, many of which sit on the Wilshire Blvd. corridor. Service is being provided to customers in the following communities: Century City, Sherman Oaks, Burbank, Glendale, Van Nuys, the Wilshire Corridor, and Westwood. Expansion plans include extending network down Sepulveda Blvd. to El Segundo, and down Santa Monica Blvd. to Santa Monica.
- San Diego - It has announced plans for a 66 mile, $15 million network connecting 54 downtown San Diego buildings.

Comments

- Typical DS1 prices to business customers is $200-225 per DS1. Volume discounts offered to IECs.
- Recently purchased Centex Telemanagement, a switched services provider/value added network, for approximately $175 million. Centex is a toll aggregator positioned for Centrex competition with Pacific Bell on Jan. 1, 1995.

Teleport Communications Group (TCG)

Offices in San Francisco, Los Angeles, and San Diego. Revenues in 1993 estimated at $90 million. TCG is jointly owned by a group of five cable TV companies

Services

- InterLATA Special Access; DS1, DS2, DS3, Fractional T1, SONET, ISDN
- Bandwidth on Demand
- Facility Management
- LAN connectivity
- Switched services

Network

- San Francisco Bay area - TCG has an 11 mile OC-48 fiber backbone connecting 53 buildings in the San Francisco financial district. It plans on leveraging off their cable network that connects the communities around the bay in building a fiber ring connecting these same communities.
- Los Angeles - It currently serves downtown Los Angeles, El Segundo, Culver City/West LA, Hollywood, Beverly Hills, and Santa Monica. Within two years plan to have 2000 fiber miles in the Los Angeles area.
- San Diego - TCG has partnered with Cox Cable and Time Warner in San Diego and plans to build its network utilizing Cox fiber wherever possible. Cox Cable of San Diego operates a system with 2,700 coaxial miles and 200 route miles of fiber.
- Sacramento - TCG plans to build a network in Sacramento, financing estimated at $2-3 million.
- Expansion plans include entering markets in Tier 2 and 3 cities.

Comments

- TCG has 5E switches in San Francisco, Los Angeles, and San Diego to offer switched services in direct competition with Pacific Bell.
- TCG has agreements with 11 cable operators for joint ventures across the country, positioning them well for new ventures, with the expectation that these alliances will create new opportunities for competing with the LECs.

Intelcom Group (ICG)

ICG, based in Denver, has become the third largest CAP nationwide with its acquisitions over the past several years. It has recently purchased Bay Area Teleport (BAT) for $12.4 million, and MTEL Digital Services for $7 million, who operate networks in the San Francisco Bay Area and Los Angeles respectively.

Services

- InterLATA DS1, DS3 special access service
- IntraLATA DS1, DS3 special access service

Network

- San Francisco Bay Area - Regional fiber and microwave network serving San Francisco, San Francisco peninsula cities, San Jose, Oakland, East Bay communities, north through Marin county to Santa Rosa, and northeast to Sacramento.
- Los Angeles - Probable expansion of MTEL's 122 mile microwave network with fiber in Los Angeles and Orange counties.

Comments

- ICG has awarded $6 million contract to T3plus Networking Inc. for BMX45 Broadband Bandwidth Manager/Switches and BMXview network management system.
- BAT acquisition positions ICG as CAP with widest market coverage in California.

Phoenix Fiberlink

Phoenix Fiberlink (PFI) is a subsidiary of Phoenix America Inc., whose primary subsidiary, Phoenix Leasing, has raised more than $915 million in equity and acquired $1.9 billion of leased assets since 1972. It has reached an agreement to be acquired by Brooks Fiber Communication, which is also to acquire Phoenix Communication LTD, a long distance reseller.

Services

- High speed (DS1 & DS3) special access and digital private line service
- "Video Conference Fiberlink" on flexible bandwidth
- LAN connectivity
- SONET
- Diverse Routing

Network

- Sacramento - Its downtown business and government network connects approximately 220 buildings, covering a 71 block area, from R St. in the south, along 7th and 12th Sts. on the west side, K and F in the north, and along K in the west. This area includes the state capitol and many other government buildings.
- Rancho Cordova - Approximately 15 miles east of Sacramento, this portion of the network will run along White Rock in the north, Prospect Parkway and Trade Center Road in the west and south, and Sunrise Blvd. in the east.
- Roseville - North of Rancho Cordova and northeast of Sacramento, this will be connected to Sacramento via fiber along the I-80 corridor.
- Expansion plans include north and east Sacramento, and Folsom.
- Network under construction in Silicon Valley.

Comments

- AT&T provided financing for approximately 60% of their Sacramento network.
- Reported that PFI has been laying fiber in San Jose down N. First and Montegue Expressway.

Electric Lightwave, Inc.

Electric Lightwave (ELI) was purchased by Citizens Utilities in June, 1990 for $10 million. Citizens is a $340 million public utility with numerous subsidiaries providing telecommunications, electric, gas, and water services to customers in 12 states. In California, Citizens serves customers in 22 local exchanges.

Services

- DSO, DS1, DS3 private line and special access service
- SONET
- Videoconferencing

Network

- Has applied to construct facilities and provide interLATA telecommunications services in California.
- Initial systems will be constructed in Sacramento and Los Angeles

Comments

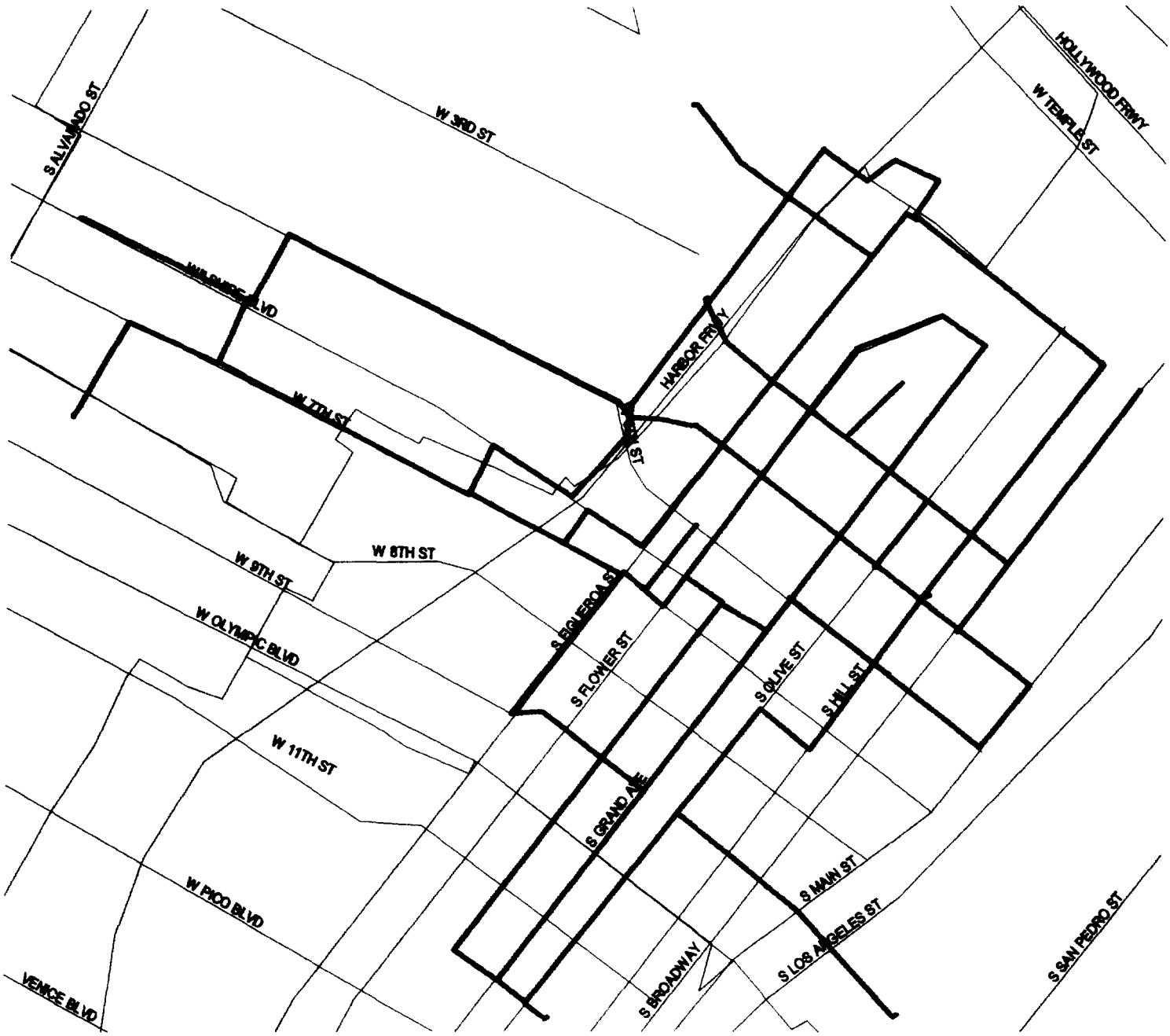
- Citizens Utilities also has an interest in Century Cable TV.

Table 1 CAP Fiber Miles Deployed Nationwide

CAP	# States Served	1987	1988	1989	1990	1991	1992
MFS	12	3,059	5,861	13,374	17,219	29,338	39.803
Teleport	8	4,711	5,433	12,346	15,519	20,238	35,004
BAT	1					85	79
Phoenix Fiberlink	1					968	1,056
Electric Lightwave	2					451	4,259
Total		**7,770**	**11,294**	**25,730**	**32,738**	**51,080**	**80,201**

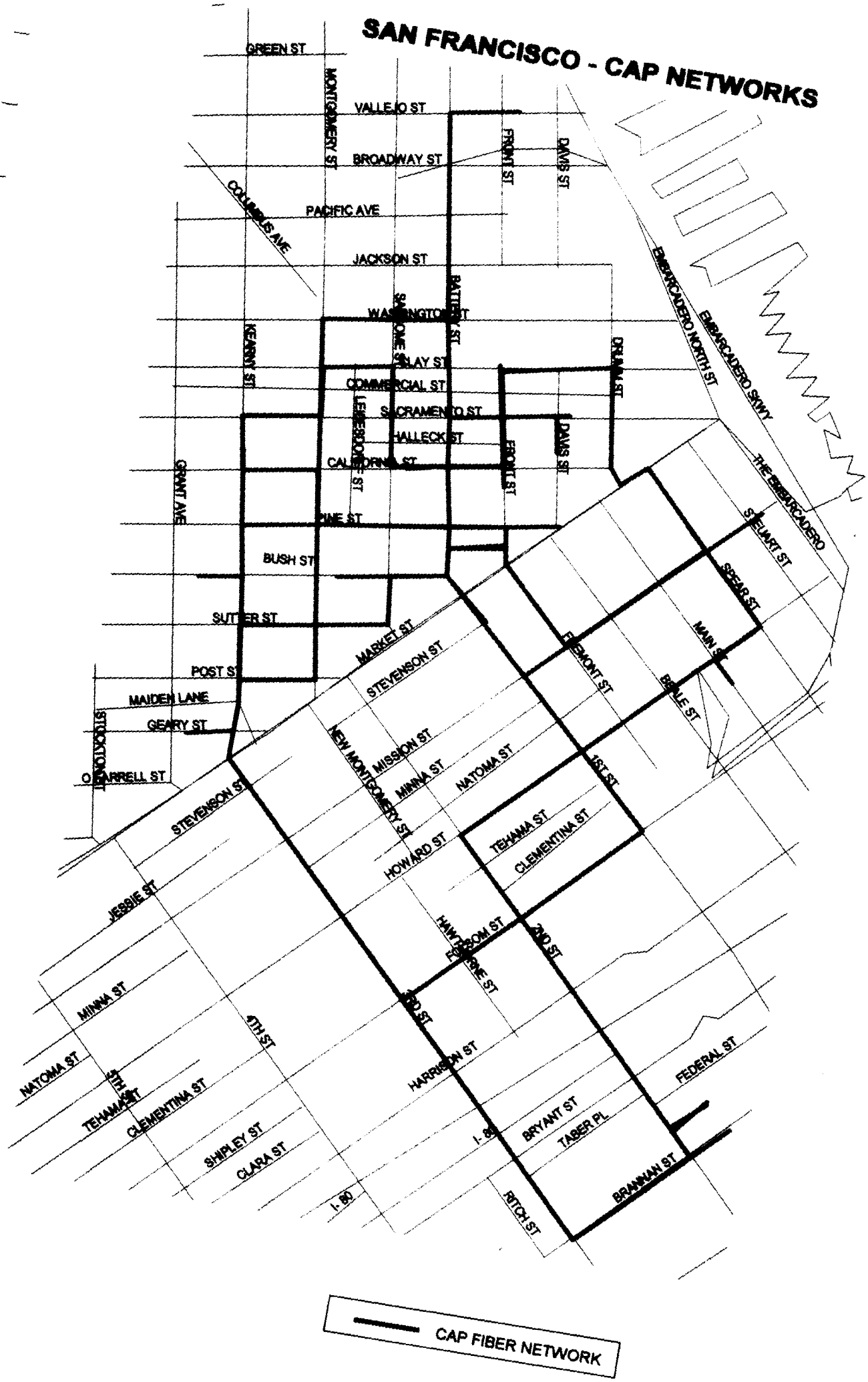
Source: ***Competition and Open Access in the Telecommunications Markets of California,*** *Peter W. Huber, February 8, 1994*

CAP NETWORKS
DOWNTOWN LOS ANGELES

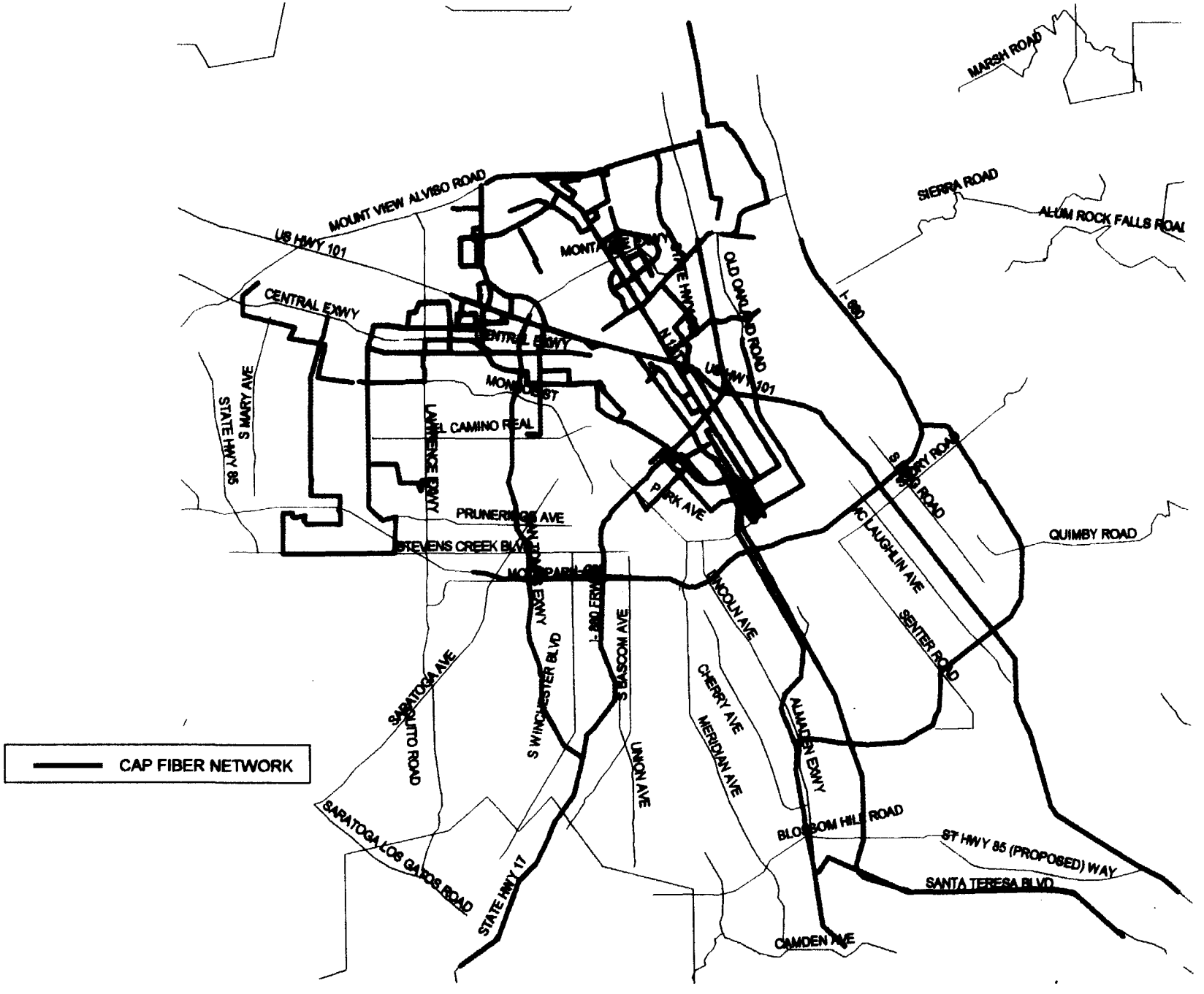


CAP FIBER NETWORK

SAN FRANCISCO - CAP NETWORKS



SILICON VALLEY - CAP NETWORKS
(SAN JOSE AREA)



CAP NETWORKS
SACRAMENTO